

**Remarks:**

1. Objections and Rejections

As noted above, the Office Action objects to the Declaration and to the length of the Abstract. Applicants, however, have overcome these objections by submitting a replacement Declaration and by amending the Abstract. Claims 9-11, 15-18, and 22-24 stand rejected under 35 U.S.C. § 112, ¶ 2, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 2, 12, 13, 15, 19, 20, 41, and 43 also stand rejected under 35 U.S.C. § 102(e), as allegedly anticipated by U.S. Patent No. 6,113,632 to Reif. Applicants respectfully traverse.

2. 35 U.S.C. § 112, ¶2

Claims 9-11, 15-18, and 22-24 stand rejected as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse.

As noted above, the Office Action rejects claims 17 and 18 as allegedly failing to include proper antecedent basis for “said urging means” and “said guiding ring,” respectively. The Office Action also rejects claim 15 as allegedly improperly including trademarks and as allegedly employing improper claim format. Finally, the Office Action rejects claims 9, 16, and 22 as allegedly using unclear, “means-plus-function” language.<sup>2</sup> In view of the foregoing amendments, Applicants maintain that each of these rejections is overcome. Therefore, in view of the foregoing amendments, Applicants respectfully request that the Examiner withdraw the indefiniteness rejections of claims 9-11, 15-18, and 22-24.

3. 35 U.S.C. § 102(b)

Claims 1, 2, 12, 13, 15, 19, 20, 41, and 43 also stand rejected as allegedly anticipated by Reif. “A claim is anticipated if and only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference,” and “the identical invention must be shown in as complete detail as contained in the claim.” MPEP 2131 (emphasis added). Applicants respectfully traverse.

Referring to the element numbers in Reif’s **Figs. 1 and 7**, the Office Action contends that:

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<sup>2</sup> Claims 10, 11, 23, and 24 stand rejected as dependent on rejected claims 9 and 22.

Reif discloses an apparatus comprising: a first cylinder (36) having first and second ends, the second end having an exterior annular lip (40) for securing to an interior groove (47) in a second cylinder (44). The first cylinder has a fabric annular cuff (18) surrounding the exterior surface adjacent to the first end.

Office Action, Page 6, Lines 8-12. Thus, the Office Action contends that male tapered threads 40 correspond to the first securing means of claims 1, 12, and 19 and to the annular lip of claims 2, 13, 20, and 43, and that female tapered threads 47 correspond to the second securing means of claims 1, 12, and 19 and to the annular groove of claims 2, 13, 20, and 43.

In response to this rejection, Applicants are amending claims 1, 12, and 19 to clarify the description of the first and second securing means. In particular, Applicants are amending these claims to state that “said first securing means and said second securing means are adapted to secure fixing sutures therebetween.” Appl’n, Paras. [0026] and [0027]; **Figs. 5 and 6**. Reif describes stiffening ring 23 as including split ring 36 and solid ring 44. Reif explains that “[t]he solid ring 44 is then passed over the external surface 12 of the orifice ring 11 and then threaded onto split ring [36]. Care is taken to correctly mate the male tapered thread 40 of split ring 36 and the female tapered thread 47 of the solid ring 44. The threaded connection is left loose. The stiffening ring 23 is positioned within annular groove 13 of the orifice ring 11 and the threading mechanism is tightened.” Reif, Column 5, Lines 33-40 (emphasis added); **Figs. 1 and 7**. Reif does not disclose that sutures may be secured between threads 40 and 47. Moreover, Applicants maintain that any attempt to secure fixing sutures between threads 40 and 47 would interfere with the correct mating of the male tapered thread 40 with the female tapered thread 47, contrary to the express teaching of Reif. Further, attempting to secure fixing sutures between threads 40 and 47 would twist and pull the sutures as “the threading mechanism is tightened” (*Id.* at Line 40) and could damage the replacement valve, the sutures, or the threads of the Reif’s stiffening ring. Therefore, Applicants maintain that in view of this amendment, claims 1, 19, and 20 are distinguished over Reif.

Applicants are canceling claim 41, without prejudice. Nevertheless, as noted above, claim 43 describes the first securing means as an annular lip and the second securing means as an annular groove, and Applicants are rewriting claim 43 in independent form to include the limitations of claim 41. A thread is a continuous helical rib, *i.e.*, a rib that is in the form of a cylindrical spiral. McGraw-Hill Dictionary of Scientific and Technical Terms, 870 and

1925 (4th ed. 1989) (defining “helical” and “thread,” respectively; copies enclosed). Thus, a thread is not “annular,” and Reif’s depiction of “annular groove 13” demonstrates that Reif understood this distinction and used the term “annular” correctly to describe an annular structure. E.g., Reif, Column 5, Line 39; **Figs. 1 and 7.**

Moreover, in view of these remarks regarding threads 40 and 47, Applicants maintain that claim 2, 13, and 20, which also describe an annular lip and an annular groove, include subject matter distinguishable over Reif. Therefore, Applicants maintain that amended claim 43 is distinguishable over Reif.

Applicants maintain that in view of the foregoing amendments and remarks, the anticipation rejections based on Reif are untenable. Therefore, Applicants respectfully request that the Examiner withdraw the anticipation rejections of claims 1, 2, 12, 13, 15, 19, 20, and 43 based on Reif.

**Conclusion**

Applicants respectfully submit that this application, as amended, is in condition for allowance, and such disposition is earnestly solicited. If the Examiner believes that a further interview with Applicants’ representatives, either in person or by telephone, would expedite prosecution of this application, we would welcome such an opportunity.

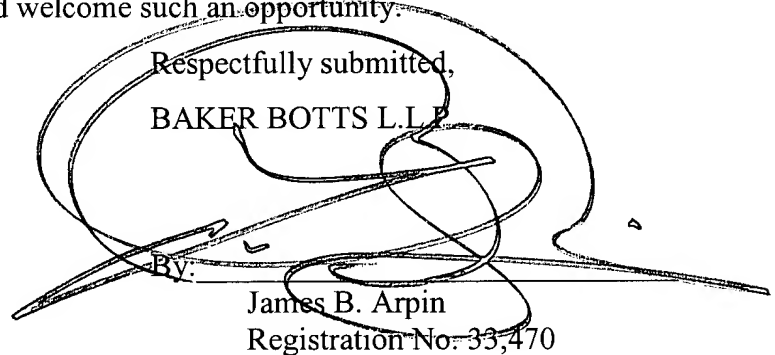
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Enclosures

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# McGraw-Hill DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

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## Fourth Edition

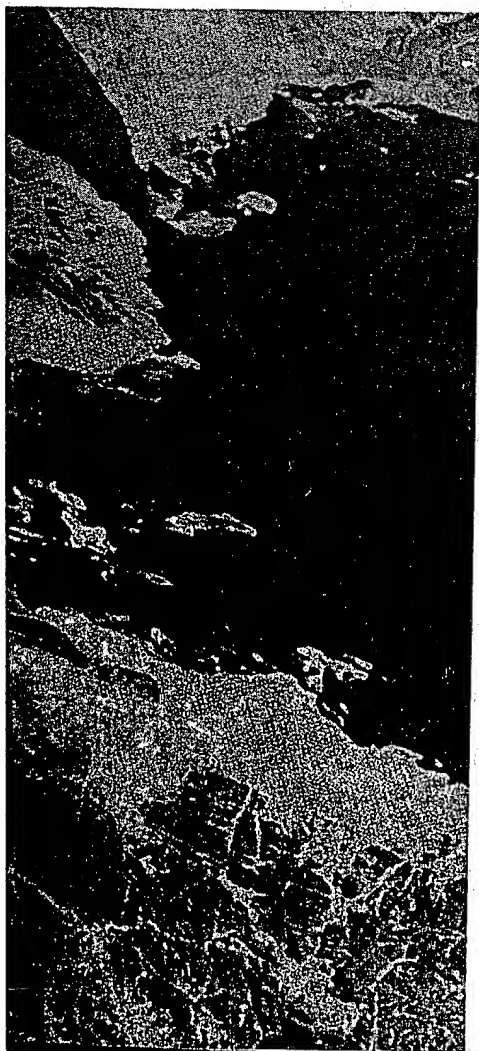
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On the cover: Pattern produced from white light by a computer-generated diffraction plate containing 529 square apertures arranged in a  $23 \times 23$  array. (R. B. Hoover, Marshall Space Flight Center)

On the title pages: Aerial photograph of the Sinai Peninsula made by Gemini spacecraft. (NASA)

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In addition, material has been drawn from the following references: R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *U.S. Air Force Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, 1st ed., National Aeronautics and Space Administration, 1965; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, 1st ed., Department of Defense, 1967; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Glossary of Stereo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; *ADP Glossary*, Department of the Navy, NAVSO P-3097.

#### **McGraw-Hill Dictionary of Scientific and Technical Terms, Fourth Edition**

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Also known as baric topography; isobaric topography; pressure topography. { 'hīt, pād-əm }

**height-position indicator** [ELECTR] Radar display which shows simultaneously angular elevation, slant range, and height of objects detected in the vertical sight plane. { 'hīt pə'zish-ən 'in-də,kād-ər }

**height-range indicator** [ELECTR] 1. Radar display which shows an echo as a bright spot on a rectangular field, slant range being indicated along the X axis, height above the horizontal plane being indicated (on a magnified scale) along the Y axis, and height above the earth being shown by a cursor. 2. Cathode-ray tube from which altitude and range measurements of flightborne objects may be viewed. { 'hīt 'rānj 'in-də,kād-ər }

**heiligschein** [OPTICS] A diffuse white ring surrounding the shadow cast by the observer's head upon a dew-covered lawn when the solar elevation is low and, therefore, the distance from observer to shadow is great. { 'hī-lə-gən,shīn }

**Heine-Borel theorem** [MATH] The theorem that the only compact subsets of the real line are those which are closed and bounded. { 'hī-nə bō'rel 'thir-əm }

**Heine-Medin disease** See poliomyelitis. { 'hī-nə 'med-ən dī,zēz }

**Heinz bodies** [PATH] Refractile spots seen in erythrocytes in hemolytic anemia that may represent denatured globulin. { 'hīnz, bād-ēz }

**Heisenberg algebra** [QUANT MECH] The Lie algebra formed by the operators of position and momentum. { 'hīz-ən-bərg, al-jə-brə }

**Heisenberg equation of motion** [QUANT MECH] An equation which gives the rate of change of an operator corresponding to a physical quantity in the Heisenberg picture. { 'hīz-ən-bərg 'i-kwā-zhən əv 'mō-shən }

**Heisenberg exchange coupling** [SOLID STATE] The exchange forces between electrons in neighboring atoms which give rise to ferromagnetism in the Heisenberg theory. { 'hīz-ən-bərg 'iks-chānj, kəp'liŋ }

**Heisenberg force** [NUC PHYS] A force between two nucleons derivable from a potential with an operator which exchanges both the positions and the spins of the particles. { 'hīz-ən-bərg, fōrs }

**Heisenberg picture** [QUANT MECH] A mode of description of a system in which dynamic states are represented by stationary vectors and physical quantities are represented by operators which evolve in the course of time. Also known as Heisenberg representation. { 'hīz-ən-bərg, pīk-chər }

**Heisenberg representation** See Heisenberg picture. { 'hīz-ən-bərg, rē-prə,zen'tā-shən }

**Heisenberg theory of ferromagnetism** [SOLID STATE] A theory in which exchange forces between electrons in neighboring atoms are shown to depend on relative orientations of electron spins, and ferromagnetism is explained by the assumption that parallel spins are favored so that all the spins in a lattice have a tendency to point in the same direction. { 'hīz-ən-bərg 'thē-ō-rē əv, fēr-ō'mag'nē,tiz-əm }

**Heisenberg uncertainty principle** See uncertainty principle. { 'hīz-ən-bərg ən'sārt-ən-tē, prīn-sə-pəl }

**Heisenberg uncertainty relation** See uncertainty relation. { 'hīz-ən-bərg ən'sārt-ən-tē rī,lā-shən }

**Heising modulation** See constant-current modulation. { 'hī-zīŋ, māj-ə,lā-shən }

**Heitler-London covalence theory** [PHYS CHEM] A calculation of the binding energy and the distance between the atoms of a diatomic hydrogen molecule, which assumes that the two electrons are in atomic orbitals about each of the nuclei, and then combines these orbitals into a symmetric or antisymmetric function. { 'hīt-lər 'lən-dən kō'vələns, thē-ō-rē }

**hekistotherm** [ECOL] Plant adapted for conditions of minimal heat; can withstand long dark periods. { 'he'kis'tō,thərm }

**Hektor** [ASTRON] An asteroid, believed to be the largest of the Trojan planets, which circles the sun in the orbit of and approximately 60° ahead of Jupiter; diameter is about 130 miles (210 kilometers) and surface composition is unusual. { 'hek-tər }

**HeLa cells** [PATH] Human cancer cells maintained in tissue culture since 1953, originally excised from the cervical carcinoma of a patient named Helen Lane. { 'hel-ə,selz }

**Helaetidae** [PALEON] A family of extinct perissodactyl mammals in the superfamily Tapiroidea. { 'hel-ə'led-ə,dē }

**Helcionellacea** [PALEON] A superfamily of extinct gastropod mollusks in the order Aspidobranchia. { 'hel-sē-ō'nə'las-ē-ə }

**Heiderbergian** [GEOL] A North American stage of geologic time, in the lower Lower Devonian. { 'hel-dər,bərg-ē-ən }

**held in common** [MIN ENG] Pertaining to a claim whereof there is more than one owner. { 'held in 'kam-ən }

**Heleidae** [INV ZOO] The biting midges, a family of orthorhaphous dipteran insects in the series Nematocera. { 'hē-lē-ə,dē }

**hellacal rising** [ASTRON] The rising of a celestial body at the same time or just before that of the sun. { 'hī'li-ə-kəl 'rīz-īŋ }

**hellacal setting** [ASTRON] The setting of a celestial body at the same time or just after that of the sun. { 'hī'li-ə-kəl 'sed-īŋ }

**Heliarc welding** See inert gas-shielded arc welding. { 'hē-lē-ə,ārk,weld-īŋ }

**Heliasteridae** [INV ZOO] A family of echinoderms in the subclass Asteroidea lacking pentameral symmetry but structurally resembling common asteroids. { 'hē-lē-ə'ster-ə,dē }

**helical** [MATH] Pertaining to a cylindrical spiral, for example, a screw thread. { 'hel-ə-kəl }

**helical angle** [MECH] In the study of torsion, the angular displacement of a longitudinal element, originally straight on the surface of an untwisted bar, which becomes helical after twisting. { 'hel-ə-kəl 'ang-gəl }

**helical antenna** [ELECTROMAG] An antenna having the form of a helix. Also known as helix antenna. { 'hel-ə-kəl 'an'tē-nə }

**helical conveyor** [MECH ENG] A conveyor for the transport of bulk materials which consists of a horizontal shaft with helical paddles or ribbons rotating inside a stationary tube. { 'hel-ə-kəl kən'vā-ər }

**helical-fin section** [CHEM ENG] Helical-shaped, extended-surface addition for the external surfaces of process-fluid tubes to increase heat-exchange efficiency; used for gas heating and cooling and in fuel oil residuum exchangers. { 'hel-ə-kəl 'fin sek-shən }

**helical-flow turbine** [MECH ENG] A steam turbine in which the steam is directed tangentially and radially inward by nozzles against buckets milled in the wheel rim; the steam flows in a helical path, reentering the buckets one or more times. Also known as tangential helical-flow turbine. { 'hel-ə-kəl 'flō 'tər-bən }

**helical gear** [MECH ENG] Gear wheels running on parallel axes, with teeth twisted oblique to the gear axis. { 'hel-ə-kəl 'gīr }

**helical line** [ELECTROMAG] A transmission line with a helical inner conductor. { 'hel-ə-kəl 'līn }

**helical milling** [MECH ENG] Milling in which the work is simultaneously rotated and translated. { 'hel-ə-kəl 'mīl-īŋ }

**helical potentiometer** [ELEC] A multiturn precision potentiometer in which a number of complete turns of the control knob are required to move the contact arm from one end of the helically wound resistance element to the other end. { 'hel-ə-kəl pə'ten-čē'am-əd-ər }

**helical rake angle** [DES ENG] The angle between the axis of a reamer and a plane tangent to its helical cutting edge; also applied to milling cutters. { 'hel-ə-kəl 'rāk, ang-gəl }

**helical resonator** [ELECTROMAG] A cavity resonator with a helical inner conductor. { 'hel-ə-kəl 'rez-ən,əd-ər }

**helical scanning** [COMMUN] A method of facsimile scanning in which a single-turn helix rotates against a stationary bar to give horizontal movement of an elemental area. [ENG] A method of radar scanning in which the antenna beam rotates continuously about the vertical axis while the elevation angle changes slowly from horizontal to vertical, so that a point on the radar beam describes a distorted helix. { 'hel-ə-kəl 'skan-īŋ }

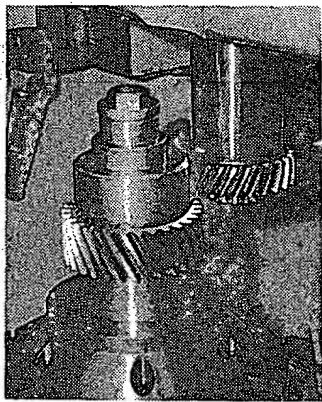
**helical spline broach** [MECH ENG] A broach used to produce internal helical splines having a straight-sided or involute form. { 'hel-ə-kəl 'splīn, brōch }

**helical spring** [DES ENG] A bar or wire of uniform cross section wound into a helix. { 'hel-ə-kəl 'sprīŋ }

**helical steel support** [MIN ENG] A continuous, screw-shaped steel joist lining used for staple shafts. { 'hel-ə-kəl 'stīl sə'pōrt }

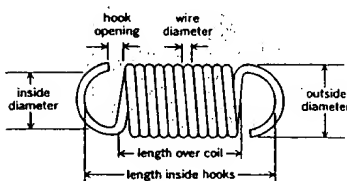
**helical traveling-wave tube** See helix tube. { 'hel-ə-kəl 'trāv-ə-līŋ 'wāv, tūb }

## HELICAL GEAR



A helical gear. (Fellows Corp.)

## HELICAL SPRING



A helical spring wound tight to extend under axial tension.

colorless crystal needles soluble in alcohol, melts at 820°C, decomposes at 928°C; used in incandescent lighting. Also known as thorium tetrachloride. { 'thōr-ē-əm 'klōr, id }

**thorium dioxide** [INORG CHEM]  $\text{ThO}_2$  A heavy, white powder soluble in sulfuric acid, insoluble in water, melts at 3300°C; used in medicine, ceramics, flame spraying, and electrodes. Also known as thorina; thorium anhydride; thorium oxide. { 'thōr-ē-əm dī'āk, sīd }

**thorium fluoride** [INORG CHEM]  $\text{ThF}_4$  A white, toxic powder, melts at 1111°C; used to make thorium metal and magnesium-thorium alloys and in high-temperature ceramics. { 'thōr-ē-əm 'flūr, id }

**thorium nitrate** [INORG CHEM]  $\text{Th}(\text{NO}_3)_4 \cdot 4\text{H}_2\text{O}$  Explosive white crystals soluble in water and alcohol; strong oxidizer; the anhydrous form decomposes at 500°C; used in medicine and as an analytical reagent. { 'thōr-ē-əm 'nī, trāt }

**thorium oxalate** [ORG CHEM]  $\text{Th}(\text{C}_2\text{O}_4)_2 \cdot 2\text{H}_2\text{O}$  A white, toxic powder soluble in alkalis and ammonium oxalate, insoluble in water and most acids, decomposes to thorium dioxide,  $\text{ThO}_2$ , above 300–400°C; used in ceramics. { 'thōr-ē-əm 'āk-sā, lāt }

**thorium oxide** See thorium dioxide. { 'thōr-ē-əm 'āk, sīd }

**thorium reactor** [NUCLEO] A nuclear reactor in which thorium surrounds the central enriched uranium core to give breeder operation. { 'thōr-ē-əm rē, āk-tər }

**thorium series** [NUCLEO] The series of nuclides resulting from the decay of thorium-232. { 'thōr-ē-əm 'sīr-ēz }

**thorium sulfate** [INORG CHEM]  $\text{Th}(\text{SO}_4)_2 \cdot 8\text{H}_2\text{O}$  A white powder soluble in ice water, loses water at 42° and 400°C. Also known as normal thorium sulfate. { 'thōr-ē-əm 'sāl, fāt }

**thorium tetrachloride** See thorium chloride. { 'thōr-ē-əm 'tē-trā'klōr, id }

**thorn** [BOT] A short, sharp, rigid, leafless branch on a plant. [ZOO] Any of various sharp spinose structures on an animal. { 'thōrn }

**thornback** [VERT ZOO] *Raja clavata*. A ray found in European waters and characterized by spines on its back. { 'thōrn, bāk }

**thornbush** [ECOL] A vegetation class that is dominated by tall succulents and profusely branching smooth-barked deciduous hardwoods which vary in density from mesquite bush in the Caribbean to the open spurge thicket in Central Africa; the climate is that of a warm desert, except for a rather short intense rainy season. Also known as Dorngehölz; Dorngestrauch; dornveld; savane armée; savane épineuse; thorn scrub. { 'thōrn, būsh }

**thorn forest** [ECOL] A type of forest formation, mostly tropical and subtropical, intermediate between desert and steppe; dominated by small trees and shrubs, many armed with thorns and spines; leaves are absent, succulent, or deciduous during long dry periods, which may also be cool; an example is the caatinga of northeastern Brazil. { 'thōrn 'fār-ēst }

**thorn scrub** See thornbush. { 'thōrn 'skrāb }

**thorogummite** [MINERAL] A silicate mineral and chemical variant of thorium silicate, with similar properties; isostructural with thorite and zircon; it is deficient in silica and contains small amounts of OH in substitution for oxygen. { 'thōr-ē-əm 'gā, mīt }

**thoron** [NUC PHYS] The conventional name for radon-220. Symbolized Tn. { 'thōr, ən }

**thoroughfare** [CIV ENG] 1. An important, unobstructed public street or highway. 2. A street going through from one street to another. 3. An inland waterway for passage of ships usually not between two bodies of water. { 'thōr-ē, fər }

**Thorpe reaction** [ORG CHEM] The reaction by which, in presence of lithium amides,  $\alpha, \omega$ -dinitriles undergo base-catalyzed condensation to cyclic iminonitriles, which can be hydrolyzed and decarboxylated to cyclic ketones. { 'thōrp rē, āk-shən }

**thorvitite** [MINERAL]  $(\text{Sc}, \text{Y})_2\text{Si}_2\text{O}_7$  A grayish-green mineral occurring in orthorhombic crystals; a source of scandium. { 'thōr'tī, tīt }

**thou** See mil. { 'thau }

**thought experiment** See Gedanken experiment. { 'thōt 'eks-pər-ī-mənt }

**thousandth mass unit** [PHYS] A unit of energy equal to the energy equivalent of a mass of  $10^{-3}$  atomic mass unit according to the Einstein mass-energy relation, that is, to the product of  $10^{-3}$  atomic mass unit and the square of the speed of light;

equal to approximately  $1.49176 \times 10^{-13}$  joule. { 'thauz-ənth 'mas 'yū-nət }

**THPC** See tetrakis(hydroxymethyl)phosphonium chloride.

**thrashing** [COMPUT SCI] An undesirable condition in a multiprogramming system, due to overcommitment of main memory, in which the various tasks compete for pages and none can operate efficiently. { 'thrāsh-īŋ }

**thread** [DES ENG] A continuous helical rib, as on a screw or pipe. [GEOL] An extremely small vein, even thinner than a stringer. [MIN ENG] A more or less straight line of stall faces, having no cuttings, loose ends, fast ends, or steps. [TEXT] A continuous strand formed by spinning and twisting together short strands of textile fibers. { 'θred }

**thread blight** [PL PATH] A fungus disease of a number of tropical and semitropical woody plants, including cocoa and tea, caused by species of *Pellicularia* and *Marasmius* which form filamentous mycelia on the surface of twigs and leaves. { 'θred, blīt }

**thread contour** [DES ENG] The shape of thread design as observed in a cross section along the major axis, for example, square or round. { 'θred, kən, tūr }

**thread count** [TEXT] An index of the compactness of a fabric determined by counting the number of warp yarns and filling yarns in 1 square inch (6.4516 square centimeters) of fabric. Also known as cloth count. { 'θred, kəunt }

**thread cutter** [MECH ENG] A tool used to cut screw threads on a pipe, screw, or bolt. { 'θred, kəd-ər }

**threadfin** [VERT ZOO] Common name for any of the fishes in the family Polynemidae. { 'θred, fīn }

**thread gage** [DES ENG] A design gage used to measure screw threads. { 'θred, gāj }

**threading die** [MECH ENG] A die which may be solid, adjustable, or spring adjustable, or a self-opening die head, used to produce an external thread on a part. { 'θred-īŋ, dī }

**threading machine** [MECH ENG] A tool used to cut or form threads inside or outside a cylinder or cone. { 'θred-īŋ mē, shēn }

**thread-lace scoria** [GEOL] Scoria whose vesicle walls have collapsed and are represented only by a network of threads. { 'θred, lās 'skōr-ē-ə }

**thread plug** [ENG] Mold part which shapes an internal thread onto a molded article; must be unscrewed from the finished piece. { 'θred, plāg }

**thread plug gage** [DES ENG] A thread gage used to measure female screw threads. { 'θred, plāg, gāj }

**thread protector** [ENG] A short-threaded ring to screw onto a pipe or into a coupling to protect the threads while the pipe is being handled or transported. Also known as pipe-thread protector. { 'θred prō, tek-tər }

**thread rating** [ENG] The maximum internal working pressure allowable for threaded pipe or tubing joints; important for pressure systems, chemical processes, and oil-well systems. { 'θred, rād-īŋ }

**thread ring gage** [DES ENG] A thread gage used to measure male screw threads. { 'θred 'rīŋ, gāj }

**thread waste** [TEXT] The hard, thready waste left on bobbins or collected during operations such as spinning, twisting, and weaving. { 'θred, wāst }

**threat collision avoidance system** [NAV] A system, based on air-traffic control transponders installed on aircraft, that issues an evasive maneuver command when it senses a collision threat. { 'θret kə, līzh-ən ə'vōid-əns, 'sīs-təm }

**three-address code** [COMPUT SCI] In computers, a multiple-address code which includes three addresses, usually two addresses from which data are taken and one address where the result is entered; location of the next instruction is not specified, and instructions are taken from storage in preassigned order. { 'θrē 'ad, res, kōd }

**three-address instruction** [COMPUT SCI] In computers, an instruction which includes an operation and specifies the location of three registers. { 'θrē 'ad, res in'strāk-shən }

**three-alpha process** [ASTROPHYS] A nuclear reaction in which three helium-4 nuclei (alpha particles) combine to form a carbon-12 nucleus, with the emission of a gamma ray; it converts helium into carbon in red giants. Also known as Salpeter process; triple-alpha process. { 'θrē 'al-fa 'prā, səs }

**three-arm protractor** [NAV] An instrument consisting essentially of a circle graduated in degrees, to which is attached one fixed arm and two arms pivoted at the center and provided